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09/703,064

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Thomas C. McDermott III

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EXAMINER

TON, ANTHONY T

ART UNIT

PAPER NUMBER

2661

7

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/703,064

Applicant(s)

MCDERMOTT ET AL.

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-34, 37-39, 41-45, 57-65 and 67 is/are rejected.
7) ☒ Claim(s) 35, 36, 40, 55, 56 and 66 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTIONS

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-11, 13, 14, 16, 32-34, 37, 38, 41, 50, 52-54, 57-65 and 67** are rejected under 35 U.S.C. 102(e) as being unpatentable over **Ramaswami et al.** (US Patent No. **6,597,826**), hereinafter referred to Ramaswami, in view of **Woodward et al.** (US Patent No. **6,151,318**), hereinafter referred to Woodward.

a) In Regarding to Claim 1: Ramaswami disclosed a communication network comprising:

two duplicated substantially identical switch fabrics, including a first switch fabric comprising a first N x M crossbar switch and a second switch fabric comprising a substantially identical second N x M crossbar switch, wherein N is the number of ingress ports and M is the number of egress ports of each respective N x M crossbar switch (*see Fig.14, 980 and 985; 900 and 955; and see Fig.19 (N:N)*) ;

wherein said first optical cross bar switch and second crossbar switch are connected in substantially identical parallel data paths, such that each ingress port of said first optical cross bar switch and said second crossbar switch is interconnected with a data launching module, and each egress port of said first optical cross bar switch and said second crossbar switch is interconnected

with a data receiving module (*see Fig.14, 925 and 930 (identical parallel data paths); 900 (data launching module) and 955 (data receiving module); and*

wherein the geometry of said switch fabrics is folded, such that a data launching module and a data receiving module occupy the same physical circuit card (*see Fig.6 and Fig.8, in which, both input module and output module (I/O Port i) can occupy the same physical circuit card 215s*).

Ramaswami failed to explicitly disclose wherein said switch fabrics transmit data encapsulated in fixed sized chunk payloads.

Woodward disclosed such data encapsulated in fixed sized chunk payloads (*see col.3 lines 58-65, and col.2 line 62-col.3 line 6: payload 36 is exactly 106 bytes long (since there are two ATM cells in the packet 30 as shown in Fig.1))*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data encapsulated in fixed sized chunk payloads as taught by Woodward with Ramaswami, so that packets can be forwarded to a destination node faster. The motivation for doing so would have been to make Ramaswami's packets be transmitted faster and reduced errors. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in this claim.

b) In Regarding to Claim 2: Ramaswami further disclosed the communication network of claim 1 wherein N is equal to M (*see Fig.16 input ports 1101A to 1101N, and output ports 1102A to 1102M; in this case, each I/O port module has one input port corresponding to one output port; therefore, $N=M$*)

c) **In Regarding to Claim 10: Ramaswami further disclosed** the communication network of claim 1 wherein said crossbar switches are optical switches (*see Fig.7, optical switch cores 240 and 260*)

d) **In Regarding to Claim 11: Ramaswami further disclosed** the communication network of claim 10 wherein said optical switches are interconnected with said data launching and said data receiving modules through optical fibers (*see Fig.6, 420*)

e) **In Regarding to Claim 13: Ramaswami further disclosed** the communication network of claim 1 wherein said data launching module and said data receiving module are internal optics modules (*see Fig.16, 1104A and 1104B; and see col.6 line 20, internal optical interface 425*).

f) **In Regarding to Claim 14: Ramaswami further disclosed** the communication network of claim 1 wherein said data launching module is interconnected with an ingress data forwarding module, and said data receiving module is interconnected with an egress data forwarding module (*see Fig.8, Tap couplers 630*).

g) **In Regarding to Claim 16: Ramaswami further disclosed** the communication network of claim 1 further comprising a router system (*see col.25 lines 34-50, optical router*).

h) **In Regarding to Claim 32: Ramaswami disclosed** a method of switch fabric protection comprising:

simultaneously launching parallel duplicate data streams through two duplicated substantially identical switch fabrics, including launching a first data stream through a first switch fabric comprising a first N x M crossbar switch, and launching a substantially identical second data stream through a second switch fabric comprising a substantially

identical second $N \times M$ crossbar switch, wherein N is the number of ingress ports and M is the number of egress ports of each respective $N \times M$ crossbar switch (*see col.6 lines 31-32, both first and second, and see Fig.12, 240 and 260; 215s and 215d; and see Fig.19 (N:N)*);

receiving said parallel duplicate data streams after passing simultaneously through said first and said second switch fabric (*see Fig.12, 215d; and see col.11 lines 53-60, a destination I/O port module 215d*);

examining said received duplicate data streams in accordance with predetermined selection criteria (*see col.2 lines 8-12, performance monitoring of these light signals; and see col.26 lines 35-36, predetermined power level*);

if either of said duplicate data streams satisfies said criteria and the other said duplicate data stream does not satisfy said criteria, then selecting said duplicate data stream that satisfies said criteria and discarding said duplicate data stream that does not satisfy said criteria (*see col.6 lines 23-49, the second optical switch core 260 provides a redundant optical path in the event the first optical switch core 240 is not operating properly in lines 25-27, select which light signal has higher quality and outputs that signal via interface 400 in lines 40-42*); and

if both of said duplicate data streams satisfy said criteria (*see col.17 lines 19-21, the same data and protocol as expected*), then arbitrarily selecting one of said duplicate data streams and arbitrarily discarding the non-selected duplicate data stream (*see col.17 lines 19-34, behavior is very beneficial to bridge and roll applications and those that have Forward-Error-Correction data ending schemes (i.e. select one of said duplicate data streams and arbitrarily discarding the non-selected duplicate data stream)*)).

Ramaswami failed to explicitly disclose wherein said switch fabrics transmit data encapsulated in fixed sized chunk payloads.

Woodward disclosed such data encapsulated in fixed sized chunk payloads (*see col.3 lines 58-65, and col.2 line 62-col.3 line 6: payload 36 is exactly 106 bytes long (since there are two ATM cells in the packet 30 as shown in Fig.1)*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data encapsulated in fixed sized chunk payloads, as taught by Woodward with Ramaswami, so that packets can be forwarded to a destination node faster. The motivation for doing so would have been to make Ramaswami's packets be transmitted faster and reduced errors. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in this claim.

j) In Regarding to Claim 37: Ramaswami further disclosed method of claim 32 wherein data delivery by said data streams is not interrupted by an occurrence selected from the group consisting of malfunction, failure, removal, and replacement of one of said two duplicated substantially identical switch fabrics (*see Fig.24, in which, switch 1950 is faulty; this switch can be isolated from the system without any interruption of the delivered data since data is delivered to output module by the switch 1955*).

k) In Regarding to Claim 38: Ramaswami further disclosed method of claim 32 wherein said examining is performed at an egress internal optics module (*see Fig.16, 1118A and 1118B*) interconnected with an egress port of each of said duplicated substantially identical switch fabrics (*see Fig.16, 1128A and 1128B*).

l) In Regarding to Claim 50: Ramaswami further disclosed method of claim 32 wherein said crossbar switches are optical switches (*see Fig. 7, optical switch cores 240 and 260*).

m) In Regarding to Claim 52: Ramaswami further disclosed method of claim 32 wherein said first and said second switch fabric are incorporated into a router system (*see col. 25 lines 34-50, optical router*).

n) In Regarding to Claim 53: Ramaswami further disclosed method of claim 38 wherein said egress internal optics module is interconnected with said egress port through an optical fiber (*see Fig. 6, 420*).

p) In Regarding to Claim 57: Ramaswami disclosed a method of fault isolation and diagnostics in a switch fabric comprising:

launching a non-traffic-bearing data structure on a predetermined data path through said switch fabric from a first module interconnected with said switch fabric (*see col. 23 line 66 to col. 24 line 14, inserting a known byte, information is read and discovered in col. 24 line 11*);

detecting and receiving said non-traffic-bearing data structure at a predetermined second module interconnected with said switch fabric (*see col. 24 lines 8-10, discover identifier information*);

examining said received non-traffic-bearing data structure in accordance with predetermined criteria (*see col. 23 line 63 to col. 24 line 2, an identifier, a known byte*);

if said non-traffic-bearing data structure satisfies said criteria, then determining that said predetermined data path is error-free (*see Fig. 23, in this case, none of switches fails – error free*); and

if said non-traffic-bearing data structure fails to satisfy said criteria, then determining that said predetermined data path is faulty (*see Fig.24, in this case, one of the switches fails – data path is faulty*).

Ramaswami failed to explicitly disclose wherein said switch fabrics transmit data encapsulated in fixed sized chunk payloads.

Woodward disclosed such data encapsulated in fixed sized chunk payloads (*see col.3 lines 58-65, and col.2 line 62-col.3 line 6: payload 36 is exactly 106 bytes long (since there are two ATM cells in the packet 30 as shown in Fig.1))*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data encapsulated in fixed sized chunk payloads as taught by Woodward with Ramaswami, so that packets can be forwarded to a destination node faster. The motivation for doing so would have been to make Ramaswami's packets be transmitted faster and reduced errors. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in this claim.

q) In Regarding to Claim 58: Ramaswami further disclosed method of claim 57 wherein said switch fabric comprises multiple duplicated switch fabrics (*see Fig.6, 240 and 260*).

r) In Regarding to Claim 59: Ramaswami further disclosed method of claim 57 wherein said first module is selected from the group consisting of optical switch modules and internal optics modules (*see Fig.16, 1118A and 1118B*);

s) In Regarding to Claim 60: Ramaswami further disclosed method of claim 57 wherein said second module is selected from the group consisting of optical switch modules and internal optics modules (*see Fig.16, 1128A and 1128B*).

t) **In Regarding to Claim 61: Ramaswami further disclosed** method of claim 57 wherein said first module and said second module are the same module (*see Fig.16, 1104A and 1104A' located inside the module 1000*).

u) **In Regarding to Claim 62: Ramaswami further disclosed** method of claim 57 wherein said predetermined criteria comprise forward error correction (*see col.17 lines 24-26*);

v) **In Regarding to Claim 63: Ramaswami further disclosed** method of claim 57 wherein said switch fabric comprises an optical crossbar switch (*see col.24 lines 21-26, Optical Cross-connect Switching*).

x) **In Regarding to Claim 64: Ramaswami further disclosed** method of claim 57 wherein said predetermined data path comprises an optical fiber cable (*see Fig.6, 420; and see col.4 lines 9-13, cable*).

y) **In Regarding to Claim 67: Ramaswami further disclosed** method of claim 57 wherein said switch fabric, said first module, and said second module are incorporated within a router system (*see col.25 lines 34-50, optical router*).

z) **In Regarding to Claim 3-9: Ramaswami and Woodward disclosed** all aspects of these claims as set forth in claims 1 and 2.

Both **Ramaswami and Woodward did not explicitly disclose** the subject matters of two identical N x M crossbar switches, wherein N is not equal to M as recited in **claim 3**; wherein N is greater than 10 as recited in **claim 4**; wherein N is greater than 40 as recited in **claim 5**; wherein N is greater than 60 as recited in **claim 6**; wherein N and M are each greater than 10 as recited in **claim 7**; wherein N and M are each greater than 40 as recited in **claim 8**; and wherein N and M are each greater than 60 as recited in **claim 9**.

However, **Ramaswami clearly disclosed** two identical $N \times N$ switches, each has N inputs and N outputs (*see Figs.19; and see Fig.16 input ports 1101A to 1101N, and output ports 1102A to 1102M*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters teaching in the instant claims with Ramaswami because N not only is an integer, but it can be any number depending on a design choice of such input and output ports. The motivation for doing so would have been to provide a compatible system that fits to other communications networks. Therefore, it would have been obvious to combine the instant claims and Ramaswami the invention as specified in these claims.

z1) In Regarding to Claims 33 and 65: Ramaswami disclosed all claimed limitations of these claims as set forth in claims 32 and 57, **except for** the subject matters of wherein said duplicate data streams comprise duplicate sequences of data structures, wherein said data structure is selected from the group consisting of data packets and substantially fixed size data chunks.

Woodward disclosed such subject matters (*see Figs.1 and 3*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters as taught by Woodward with Ramaswami, so that a data cannot be easily corrupted. The motivation for doing so would have been to transmit packets through a switching fabric without corruptions. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in these claims.

z2) In Regarding to Claims 34, 41 and 54: Ramaswami disclosed all claimed limitations of these claims as set forth in claims 32 and 33. **Ramaswami further disclosed a**

code selected from the group consisting of forward error correction code and cyclic redundancy code (*see col.17 lines 24-26, forward error correction*).

Ramaswami failed to explicitly disclose wherein said data structures are encapsulated before said launching with a code selected from the group consisting of forward error correction code and cyclic redundancy code.

Woodward disclosed such data structures are encapsulated (*see Figs.1 and 3*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters as taught by Woodward with Ramaswami, so that a data can be protected without errors. The motivation for doing so would have been to transmit packets through a switching fabric without corruptions. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in these claims.

3. **Claims 12, 17-29, 31, 42-49 and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ramaswami** (US Patent No. 6,597,826) in view of **Woodward** (US Patent No. 6,151,318), and further in view of **Cloonan et al.** (US Patent No. 5,724,352), hereinafter referred to as Cloonan.

a) **In Regarding to Claims 12 and 51: Ramaswami disclosed** all claimed limitations of the claims 12 and 51 as set forth in claims 1 and 32, **except for** each of the crossbar switches is configured to pass information at a data rate of approximately 12.5 gigabits per second.

Cloonan disclosed such a data rate of approximately 12.5 gigabits per second (*see Cloonan et al. col.2 lines 51-56*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data rate as taught by Cloonan with Ramaswami, so that more throughputs can be used with such a data rate. The motivation for doing so would have been to make Ramaswami more reliable in communications networks. Therefore, it would have been obvious to combine Cloonan and Ramaswami the invention as specified in these claims.

b) In Regarding to Claim 17: Ramaswami disclosed a communication network comprising:

two duplicated substantially identical switch fabrics, including a first switch fabric comprising a first $N \times M$ optical crossbar switch and a second switch fabric comprising a substantially identical second $N \times M$ optical crossbar switch, wherein N is the number of ingress ports and M is the number of egress ports of each respective $N \times M$ crossbar switch (*see Fig.12, 240 and 260; 215s and 215d; and see Fig.19 (N:N)*);

wherein said first optical crossbar switch and second optical crossbar switches are connected in substantially identical parallel data paths, such that each ingress port of said first optical crossbar switch and said second optical crossbar switch is interconnected with a data launching module, and each egress port of said first optical crossbar switch and said second optical crossbar switch is interconnected with a data receiving module (*see Fig.14, 925 and 930 (identical parallel data paths); 900 (data launching module) and 955 (data receiving module)*).

Ramaswami failed to explicitly disclose wherein said switch fabrics transmit data encapsulated in fixed sized chunk payloads.

Woodward disclosed such data encapsulated in fixed sized chunk payloads (*see col.3 lines 58-65, and col.2 line 62-col.3 line 6: payload 36 is exactly 106 bytes long (since there are two ATM cells in the packet 30 as shown in Fig.1)).*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data encapsulated in fixed sized chunk payloads as taught by Woodward with Ramaswami, so that more throughputs can be used with such a data rate. The motivation for doing so would have been to make Ramaswami more reliable in communications networks. Therefore, it would have been obvious to combine Woodward and Ramaswami the invention as specified in these claims.

Ramaswami also failed to explicitly disclose each of the crossbar switches is configured to pass information at a data rate of approximately 12.5 gigabits per second.

Cloonan disclosed such a data rate of approximately 12.5 gigabits per second (*see col.2 lines 51-56*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a data rate as taught by Cloonan with Ramaswami, so that more throughputs can be used with such a data rate. The motivation for doing so would have been to make Ramaswami more reliable in communications networks. Therefore, it would have been obvious to combine Cloonan and Ramaswami the invention as specified in these claims.

c) In Regarding to Claim 18: Ramaswami further disclosed the communication network of claim 17 wherein the geometry of said switch fabrics is folded, such that a data launching module and a data receiving module occupy the same physical circuit card (*see Fig.6*

and Fig.8, in which, both input module and output module (I/O port module 215s) can occupy the same physical circuit card).

d) In Regarding to Claim 19: Ramaswami further disclosed the communication network of claim 17 wherein N is equal to M (*see Fig.19, N:N*).

e) In Regarding to Claim 27: Ramaswami further disclosed the communication network of claim 17 wherein said optical crossbar switches are interconnected with said data launching modules and said data receiving modules through optical fibers (*see Fig.8, 430 and 440*).

f) In Regarding to Claim 28: Ramaswami further disclosed the communication network of claim 17 wherein said data launching module and said data receiving module are internal optics modules (*see Fig.6, 425; and see col.6 line 20, internal optical interface 425*).

g) In Regarding to Claim 29: Ramaswami further disclosed the communication network of claim 17 wherein said data launching module is interconnected with an ingress data forwarding module, and said data receiving module is interconnected with an egress data forwarding module (*see Fig.7, I/O port modules 215s and 215d*); and

h) In Regarding to Claim 31: Ramaswami further disclosed the communication network of claim 17 the communication network further comprising a router system, said router system incorporating said first and said second switch fabrics (*see col.25 lines 34-50, optical router*).

i) In Regarding to Claims 20-26: Ramaswami and Woodward disclosed all aspects of these claims as set forth in claims 17 and 19.

Ramaswami and Woodward did not explicitly disclose the subject matters of two identical $N \times M$ crossbar switches, wherein N is not equal to M as recited in **claim 20**; wherein N is greater than 10 as recited in **claim 21**; wherein N is greater than 40 as recited in **claim 22**; wherein N is greater than 60 as recited in **claim 23**; wherein N and M are each greater than 10 as recited in **claim 24**; wherein N and M are each greater than 40 as recited in **claim 25**; and wherein N and M are each greater than 60 as recited in **claim 26**.

However, both Ramaswami and Cloonan clearly disclosed two identical $N \times N$ switches; each has N inputs and N outputs (*see Ramaswami Fig.19, $N:N$ and Fig.16, input ports 1101A to 1101N, and output ports 1102A to 1102M; and see Cloonan, Fig.1, $N \times FN$*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters teaching in the instant claims with Ramaswami because N not only is an integer, but it can be any number depending on a design choice of such input and output ports. The motivation for doing so would have been to make Ramaswami more reliable in communications networks. Therefore, it would have been obvious to combine the instant claims and Ramaswami the invention as specified in these claims.

j) In Regarding to Claims 42-49: These claims are rejected for the same reasons as claims 19-26, respectively because the method steps claimed can be practice with the communication network in the claims 19-26.

4. **Claims 15 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over of **Ramaswami** (US Patent No. 6,597,826) in view of **Woodward** (US Patent No. 6,151,318) as

applied to claims 1, 14, 32 and 38 above, and further in view of **Hurtta et al.** (US Patent No. 6,226,261), hereinafter referred to as Hurtta.

Ramaswami disclosed all claimed limitations of the claims 15 and 39 as set forth in claims 1, 14, 32 and 38, **except for** wherein said ingress data forwarding module and said egress data forwarding module are packet forwarding modules.

Hurtta disclosed such modules are packet-forwarding modules (*see col.7 lines 55-67, packets, input and output ports*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters as taught by Hurtta with Ramaswami so that a data can be implemented by packet protocol. The motivation for doing so would have been to forward packets properly. Therefore, it would have been obvious to combine Hurtta and Ramaswami the invention as specified in these claims.

5. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over of **Ramaswami** (US Patent No. 6,597,826) in view of **Woodward** (US Patent No. 6,151,318) and **Cloonan** (US Patent No. 5,724,352) as applied to the claims 17 and 29 above, and further in view of **Hurtta** (US Patent No. 6,226,261).

Ramaswami, Woodward and Cloonan disclosed all claimed limitations of the claim 30 as set forth in claims 17 and 29, **except for** wherein said ingress data forwarding module and said egress data forwarding module are packet forwarding modules. **Hurtta disclosed** such modules are packet-forwarding modules (*see col.7 lines 55-67, packets, input and output ports*).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such subject matters as taught by Hurtta with Ramaswami, so that a data can be implemented by packet protocol. The motivation for doing so would have been to forward packets properly. Therefore, it would have been obvious to combine Hurtta and Ramaswami the invention as specified in these claims.

Allowable Subject Matter

6. **Claims 35, 36, 40, 55, 56 and 66** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-67 have been considered but are moot in view of the new ground(s) of rejection.

REMARKS

9. In the remarks filed on **04/13/2004**, Applicants traversed the rejection of claims 1-34, 37-39, 41-54, 57-65 and 67 that were originally pending in the application. Applicants have herein amended claims 1, 17, 32 and 57. The transversal is based on the references of Ramaswami, Woodward, Cloonan and Hurtta.

Objections to the Claims

Claims 35, 36, 40, 55, 56, and 66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants have amended claims 1 and 17 for more clear; therefore, Examiner's objection is dropped.

Rejections of the Claims

35 U.S.C. 102 Claim Resections

Claims 1, 2, 10, 11, 13, 14, 16, 32, 37, 38, 50, 52, 53, 57-64, and 67 were rejected under 35 U.S.C. 102(e) as being anticipated by **Ramaswami et al.** (U.S. Patent No. **6,597,826**), hereinafter referred to as Ramaswami.

Applicants have amended claims 1, 32, and 57 herein to recite a communication network and/or method "...wherein said switch fabric(s) transmit data encapsulated in **fixed sized chunk payloads...**".

The Applicant specified by reference page 9 line 9 through page 10 line 6 of the co-pending and commonly assigned the U.S. Patent Serial No. 09/703,038, but the Examiner hasn't found any chunks having **uniform sized payloads**, the Examiner only found a chunk with 400 byte total payload size in such a reference.

The Examiner **had not asserted** that the limitation of uniform-sized payloads is taught by the combination of Ramaswami **and Woodward** (U.S. Patent No. **6,151,318**) for the **original claims 1, 32 and 57**. In the item 4 of the Office Action date February 25, 2003 (paper 4), the

claims 1, 32 and 57 were rejected under 35 U.S.C. 102(e) as being anticipated by Ramaswami (US Patent No. 6,579,826). There was no combination of Ramaswami and Woodward to the rejections to these three claims 1, 32 and 57. However, the Examiner's assertion in regarding the teaching of the combination of Ramaswami and Woodward (hereinafter referred to as Woodward) to Claims 33, 34, 41, 54 and 65 only (*please refer to the item 11 of the paper 4*).

As amended, **Claim 1, 32, and 57** herein with a new claimed limitation “wherein said switch fabrics transmit **data encapsulated in fixed sized chunk payloads**” has been added to these claims. However, the rejection to these claims is still maintained under the new grounds of rejection as a combination of Ramaswami and Woodward.

In Figs.1-3, Woodward describes a diagram of multiple ATM cells encapsulated in a single packet (*as shown in Fig.1*) and multiple ATM cells encapsulated within multiple packets (*as shown in Figs.2 and 3*); wherein, **a number** of ATM cells (*hence chunks*) can be varied in a single packet or multiple packets, but **the size of each ATM cell is exactly fixed to 53 bytes with 5 bytes of header and 48 bytes of payload**;

Furthermore, Woodward describes the payload of the single packet that can be exactly 106 bytes long (*see col.3 lines 58-65, and col.2 line 62-col.3 line 6: payload 36 is exactly 106 bytes long (since there are two ATM cells in the packet 30 as shown in Fig.1)*).

Thus, Woodward clearly disclosed such **data encapsulated in fixed sized chunk payloads** of the instant claims, and one of reasons to make a combination of Ramaswami and Woodward is to transmit Woodward's encapsulated packets throughout the switch fabrics of Ramaswami faster and reducing errors, **the motivation being** to make Ramaswami more efficient and more reliable.

Claims 2-16, 33-56 and 58-67 depend either directly or indirectly from base claims 1, 32 and 57 as amended, and accordingly inherit all of the limitations of their respective base claims. Since claims 1, 32 and 57 are not allowable, therefore claims 2-16, 33-56, and 58-67 are also not allowed for the same reasons. The rejections to claims 2, 10, 11, 13, 14, 16, 37, 38, 50, 52, 53, 58-64, and 67 are still maintained for the same reasons as described above.

35 U.S.C. 103 Claim Resections

Unpatentable Over Ramaswami

Claims 3-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami and now with the combination of Ramaswami and Woodward since the claims have been amended. Claims 3-9 depend indirectly from base claim 1 as amended, and accordingly inherit all of the limitations of base claim 1. Therefore, the rejection to these claims is still maintained under the new grounds of rejection as the combination of Ramaswami and Woodward.

Combination of Ramaswami and Cloonan

Claims 12 and 51, 17-29, 31, and 42-49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami in view of Cloonan (U.S. Patent No. 5,724,352).

Applicants have amended **claim 17** herein to recite similarly to claims 1, 32, and 57, as amended, a communication network and/or method "...wherein said switch fabric(s) transmit data encapsulated in **fixed sized chunk payloads**...". However, Woodward clearly disclosed such **data encapsulated in fixed sized chunk payloads** of the instant claims as described above.

Therefore, the rejection to the claim 17 is still maintained under the new grounds of rejection as a the combination of Ramaswami, Woodward and Cloonan as set forth in this Office Action.

Claims 12, 18-29, 31, 42-49, and 51 depend indirectly from base claims 1, 17, and 32 as amended, and accordingly inherit all of the limitations of base claims 1, 17, and 32. Since claims 1, 17, and 32 as amended but are not allowable for the reasons set forth above, therefore claims 12, 18-29, 31, 42-49, and 51 cannot be allowable for the same reasons. The rejection to these claims is still maintained under the ground rejections of the combination of Ramaswami, Woodward and Cloonan as set forth in this Office Action.

Combination of Ramaswami and Hurtta

Claims 15 and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami in view of Hurtta (U.S. Patent No. 6,226,261).

Claims 15 and 39 depend indirectly from base claims 1 and 32 as amended, and accordingly inherit all of the limitations of base claims 1 and 32. Since claims 1 and 32 as amended but are not allowable for the reasons set forth above, therefore claims 15 and 39 cannot be allowable for the same reasons. The rejection to these claims is still maintained under the ground rejections of the combination of Ramaswami, Woodward and Hurtta as set forth in this Office Action.

Combination of Ramaswami/Cloonan/Hurtta

Claim 30 was rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami in view of Cloonan, and further in view of Hurtta. Claim 30 depends indirectly from base claim 17

as amended, and accordingly inherits all of the limitations of base claim 17. Since the claim 17 as amended and is not allowable for the reasons set forth above, therefore claim 30 is also not allowable for the same reasons. Therefore, the rejection to this claim is still maintained under the ground rejections of the combination of Ramaswami, Woodward, Cloonan and Hurtt as set forth in this Office Action.

Combination of Ramaswami and Woodward

Claims 33, 34, 41, 54, and 65 were rejected under 35 U.S.C. 103(a) as unpatentable over Ramaswami in view of Woodward. Claims 33, 34, 41, 54, and 65 depend either directly or indirectly from base claims 32 and 57, and accordingly inherit all of the limitations of their respective base claim 32 or 57 as amended. Since claims 32 and 57 as amended are not allowable for the reasons set forth above, therefore claims 33, 34, 41, 54, and 65 are also not allowable for the same reasons. The rejection to these claims is still maintained under the ground rejections of the combination of Ramaswami and Woodward as set forth in this Office Action.

Allowable Subject Matter

Claims 35, 36, 40, 55, and 66 would be allowable if rewritten to overcome rejection(s) under 35 U.S.C. 112, second paragraph. In fact, there were no grounds for such a rejection to these claims in the Office Action Paper 4, and these claims should be objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Please refer to the item 6 of this Office Action for the current objection.

Conclusion

In view of the above, each of the presently pending claims 1-67 was carefully traversed and considered. However, the rejections to claims 1-34, 37-39, 41-54, 57-56 and 67 and the objection to claims 35, 36, 40, 55, 56 and 66 are still maintained as set forth in this Office Action.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Examiner Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is 703-305-8956. The examiner can normally be reached on M-F: 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms can reach on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ATT
6/18/2004



Phirin Sam